

CLAIMS

What is claimed is:

1. A method for managing cooperative positioning among WTRUs in a wireless communication system, the method comprising the steps of:
 - identifying users registered with the system that are willing to participate in cooperative positioning;
 - identifying at least one target-WTRU;
 - identifying willing users having a WTRU that is well-located and within a predetermined geographic area of the target-WTRU;
 - transmitting a message to well-located WTRUs within a predetermined geographic area of the target-WTRU wherein the message requests positioning information regarding the target-WTRU be provided to the wireless communication system; and
 - crediting users whose WTRUs provide the requested positioning information.
2. The method of claim 1 wherein the message is broadcast and includes the spreading code of the target-WTRU.
3. The method of claim 1 wherein a WTRU is well-located where the WTRU has determined its own position with a degree of confidence that is above a predetermined value.
4. The method of claim 1 further comprising the step of:
 - calculating the position of the target-WTRU using the positioning information provided to the wireless communication system.

5. The method of claim 1 wherein the positioning information accepted by the system is limited to positioning information reported to the system with a degree of confidence above a predetermined level.

6. A method whereby a user may participate in cooperative positioning in a wireless communication system, the method comprising the steps of:

- registering a WTRU with a wireless communication system;
- responding affirmatively to a system query seeking users willing to allow their WTRUs to be used for purposes of cooperative positioning;
- reporting to the system a degree of confidence in a calculated position of the registered WTRU;
- receiving a well-located indication where the reported degree of confidence is above a predetermined level;
- receiving a request from the system to provide positioning information regarding a target-WTRU; and
- providing the requested positioning information to the system.

7. The method of claim 6 wherein the request is received in a message broadcast from the system.

8. The method of claim 7 wherein the broadcast includes a signature unique to the registered WTRU.

9. The method of claim 8 wherein the unique signature is a spreading code of the WTRU.

10. The method of claim 6 further comprising the step of:
receiving a credit for providing the requested positioning information.

11. A method for positioning WTRUs in a wireless communication system, the method comprising the steps of:

identifying users registered with a wireless communication system that are willing to participate in cooperative positioning;

identifying at least one target-WTRU;

transmitting a broadcast message to willing participants within a predetermined geographic range of the target-WTRU wherein the broadcast message requests positioning information regarding the target-WTRU be provided to the system; and

calculating the position of the target-WTRU based on positioning information provided by the willing participants that respond to the broadcast message.

12. The method of claim 11 wherein positioning information used to calculate the position of the target-WTRU is limited to positioning information provided by users having well-located WTRUs.

13. The method of claim 11 wherein positioning information used to calculate the position of the target-WTRU is limited to positioning information reported with a degree of confidence above a predetermined level.

14. A wireless transmit/receive unit (WTRU) comprising:

a receiver configured to receive requests for positioning information regarding a selected target-WTRU from a wireless network and to receive signals from the selected target-WTRU in response to received requests;

a processor configured to perform position measurements regarding the target-WTRU based on signals received for purposes of performing the position measurements;

a transmitter configured to transmit results of position measurements to the wireless network; and

a memory for storing the number of instances where positioning information is provided to the system.

15. The WTRU of claim 14 further including a switch for enabling and disabling the ability of said WTRU to respond to positioning requests received from the system.

16. The WTRU of claim 14 further including a display for displaying the number of instances where positioning information is provided to the system.